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09/273,197	03/19/1999	ROBERT T. GALLAGHER	500.714US1	6784

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FOGG AND ASSOCIATES, LLC
P.O. BOX 581339
MINNEAPOLIS, MN 55458-1339

EXAMINER	
RYMAN, DANIEL J	
ART UNIT	**PAPER NUMBER**
2665	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/273,197	Applicant(s) GALLAGHER, ROBERT T.	
	Examiner Daniel J. Ryman	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 17 February 2005.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 23-42 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 23-42 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/4/2002.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 23-42 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 23-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farhan et al (USPN 6,373,611) in view of Dail (USPN 5,878,325) in further view of Karasawa (USPN 6,144,665).

4. Regarding claims 23, 33, and 37, Farhan discloses a hybrid fiber/coax network comprising: a fiber optic link (ref. 110) (col. 1, lines 10-21 and col. 1, line 63-col. 2, line 25); a plurality of coaxial cable links (ref. 120) (col. 1, lines 10-21 and col. 1, line 63-col. 2, line 25); an optical distribution node (ref. 115) coupled to the plurality of coaxial cable links and including a transmitter (ref. 200) (col. 2, lines 26-67), the transmitter including, an analog-to-digital converter (ref. 205) configured to receive the first analog signal, and configured to convert the first analog signal into a digital signal (col. 2, lines 26-67), a multiplexer (ref. 220) configured to convert the digital signal into a serial data stream format (Fig. 5; col. 2, lines 40-67; col. 4, lines 30-46; and col. 5, lines 27-45), and an optical transmitter (ref. 225) configured to transmit the combined digital signal via the fiber optic link (Fig. 5; col. 2, lines 40-67; col. 4, lines 30-46; and

col. 5, lines 27-45); and a head end (ref. 105) coupled to the optical distribution node via the fiber optic link (col. 1, lines 10-21 and col. 1, line 63-col. 2, line 25) and including a receiver (ref. 305), the receiver including, an optical receiver (ref. 310) configured to receive the combined digital signal via the fiber optic link (col. 3, lines 1-25), a demultiplexer (ref. 315) configured to demultiplex the combined digital signal into the digital signal (col. 3, lines 1-25), and a digital-to-analog converter (ref. 320) configured to convert the digital signal into a second analog signal (col. 3, lines 1-25).

Farhan does not expressly disclose that the transmitter includes a bandpass filter configured to receive a first analog signal from at least one of the plurality of coaxial cable links, and configured to selectively filter the first analog signal based on a predetermined frequency range where the A/D converter is responsive to the at least one bandpass filter. However, Farhan does disclose that the return path signals for a hybrid fiber/coax network are associated with a portion of the frequency spectrum (col. 5, lines 46-52). Farhan also discloses the use of filters to select a portion of a frequency band (col. 3, lines 15-26). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have at least one bandpass filter that is operable to select a portion of the frequency spectrum that is associated with return path signals for a hybrid fiber/coax network, where the A/D converter is responsive to the at least one bandpass filter, in order to select the signals on the return path of the coax network.

Farhan does not explicitly disclose that the analog-to-digital converter is configured to convert the first analog signal into a baseband digital signal. However, Farhan does disclose that the headend receives a modulated signal, demodulates the modulated signal to baseband, and then converts this baseband signal to an optical signal for transmission downstream (col. 1, line

63-col. 2, line 14). Dail teaches, in a hybrid fiber-coax system, having baseband digital signals in order to reduce ingress noise (abstract; col. 4, lines 22-39; and col. 4, line 64-col. 5, line 30). It would have been obvious to one of ordinary skill in the art at the time of the invention to use baseband digital signals in order to reduce ingress noise.

Farhan in view of Dail does not expressly disclose that the transmitter includes a status monitoring unit configured to generate status data representing an operational status of the optical distribution node; that the multiplexer is configured to multiplex the digital signal and the status data to create a combined digital signal; that the demultiplexer is configured to demultiplex the combined digital signal into the digital signal and the status data; or that the receiver contains a node status monitoring unit configured to receive the status data from the demultiplexer. Karasawa teaches, in an optical communication system, having a transmitter (ref. 10) include a status monitoring unit (ref. 11) configured to generate status data representing an operational status of an optical node (col. 1, lines 45-62; col. 2, lines 34-54; col. 3, lines 22-24); having a multiplexer (ref. 16) configured to multiplex the digital signal and the status data to create a combined digital signal (col. 3, lines 35-42); having a demultiplexer (ref. 23) configured to demultiplex the combined digital signal into the digital signal and the status data (col. 3, lines 54-57); and having a receiver (ref. 20) contains a node status monitoring unit (ref. 21) configured to receive the status data from the demultiplexer (col. 3, lines 43-50) in order to allow the system to do the system control operation on the optical node and the head end (col. 2, lines 52-54). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the transmitter include a status monitoring unit configured to generate status data representing an operational status of the optical distribution node; to configure the multiplexer to

multiplex the digital signal and the status data to create a combined digital signal; to configure the demultiplexer to demultiplex the combined digital signal into the digital signal and the status data; and to have the receiver contain a node status monitoring unit configured to receive the status data from the demultiplexer in order to allow the system to do the system control operation on the optical node and the head end.

5. Regarding claims 24, 34, and 38, Farhan in view of Dail in further view of Karasawa does not expressly disclose that the bandpass filter is configured to filter the first analog signal to produce signals within a frequency range of 5 MHz and 42 Mhz. However, Farhan in view of Dail in further view of Karasawa does suggest that the bandwidth filter would have a pass band of a particular frequency range (Farhan: col. 5, lines 46-52). It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Farhan in view of Dail in further view of Karasawa suggests that the pass band would have a frequency range, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any frequency range, including from 5 to 42 MHZ, absent a showing of criticality by Applicant.

6. Regarding claims 25, 35, and 39, Farhan in view of Dail in further view of Karasawa discloses a data providing unit (ref. 11) disposed in the transmitter and configured to transmit to the multiplexer additional data that includes at least one of framing data and data for bit error rate link performance testing (transmission line bit errors), wherein the multiplexer is further configured to multiplex the additional data, the baseband digital signal, and the status data to create the combined digital signal (Karasawa: col. 4, lines 30-36).

7. Regarding claims 26, 36, and 40, Farhan in view of Dail in further view of Karasawa discloses a data storage unit (ref. 21) disposed in the receiver and configured to receive the additional data from the demultiplexer, wherein the demultiplexer is further configured to demultiplex the combined digital signal into the additional data, the baseband digital signal, and the status data (Karasawa: col. 3, lines 43-60).

8. Regarding claims 27 and 41, Farhan in view of Dail in further view of Karasawa does not expressly disclose that the analog-to-digital converter is configured to convert the first analog signal to the baseband digital signal at least at 850 mega-bits per second with a 10-bit data width. However, Farhan in view of Dail in further view of Karasawa does disclose an A/D converter that is operable to generate a rate at a particular data width (Farhan: col. 1, lines 10-21 and col. 1, line 63-col. 2, line 25). It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d

849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Farhan in view of Dail in further view of Karasawa discloses an A/D converter that is operable to generate a rate at a particular width, it would have been obvious to one of ordinary skill in the art at the time of the invention to generate any rate, including at least 850 Megabits per second, at any width, including a 10-bit data width, absent a showing of criticality by Applicant.

9. Regarding claims 28 and 42, Farhan in view of Dail in further view of Karasawa does not expressly disclose that the optical transmitter includes a 1310 nanometer digital laser configured to transmit the combined digital signal at a bit rate of up to approximately 1 gigabit per second. However, Farhan in view of Dail in further view of Karasawa does disclose that the optical transmitter includes a digital laser configured to transmit the digital signal at a bit rate (Farhan: col. 2, lines 62-67). It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Farhan in view of Dail in further view of Karasawa discloses that the optical transmitter includes a digital laser configured to transmit the digital signal at a bit rate, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any type of optical transmitter, including a 1310 nanometer digital laser,

configured to transmit the combined digital signal at any rate, including a bit rate of up to approximately 1 gigabit per second, absent a showing of criticality by Applicant.

10. Regarding claim 29, Farhan discloses a hybrid fiber/coax network comprising: a fiber optic link (ref. 110) (col. 1, lines 10-21 and col. 1, line 63-col. 2, line 25); a plurality of coaxial cable links of a predetermined quantity (ref. 120) (col. 1, lines 10-21 and col. 1, line 63-col. 2, line 25); an optical distribution node (ref. 115) coupled to the plurality of coaxial cable links and including a transmitter (ref. 200) (col. 2, lines 26-67), the transmitter including, a plurality of analog-to-digital converters (ref. 205) of the predetermined quantity, each configured to convert the corresponding first analog signal into a corresponding digital signal (col. 2, lines 26-67), a plurality of first multiplexers (ref. 220) of the predetermined quantity, each configured to convert the corresponding digital signal into a serial data stream format (Fig. 5; col. 2, lines 40-67; col. 4, lines 30-46; and col. 5, lines 27-45), a second multiplexer (ref. 550) configured to multiplex the baseband digital signals received from the plurality of first multiplexers to create a combined digital signal (col. 4, lines 61-65 and col. 5, lines 11-26), and an optical transmitter (ref. 225) configured to transmit the combined digital signal via the fiber optic link (Fig. 5; col. 2, lines 40-67; col. 4, lines 30-46; and col. 5, lines 27-45); and a head end (ref. 105) coupled to the optical distribution node via the fiber optic link (col. 1, lines 10-21 and col. 1, line 63-col. 2, line 25) and including a receiver (ref. 305), the receiver including, an optical receiver (ref. 310) configured to receive the combined digital signal via the fiber optic link (col. 3, lines 1-25), a first demultiplexer (ref. 650) configured to demultiplex the combined digital signal into the baseband digital signals (col. 5, lines 1-26), a plurality of second demultiplexers (ref. 315) of the predetermined quantity, each configured to convert a corresponding one of the baseband digital

signals received from the first demultiplexer into a non-serial data stream format (col. 3, lines 1-25), and a plurality of digital-to-analog converters (ref. 320) of the predetermined quantity, each configured to convert the corresponding digital signals into a corresponding second analog signal (col. 3, lines 1-25).

Farhan does not expressly disclose that the transmitter includes a plurality of bandpass filters of the predetermined quantity, each configured to receive a first analog signal from a corresponding one of the plurality of coaxial cable links, and each configured to selectively filter the corresponding first analog signal based on a predetermined frequency range, where the A/D converter is responsive to the at least one bandpass filter. However, Farhan does disclose that the return path signals for a hybrid fiber/coax network are associated with a portion of the frequency spectrum (col. 5, lines 46-52). Farhan also discloses the use of filters to select a portion of a frequency band (col. 3, lines 15-26). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have a plurality of bandpass filters of the predetermined quantity, each configured to receive a first analog signal from a corresponding one of the plurality of coaxial cable links, and each configured to selectively filter the corresponding first analog signal based on a predetermined frequency range, where the A/D converter is responsive to the at least one bandpass filter, in order to select the signals on the return path of the coax network.

Farhan does not explicitly disclose that the analog-to-digital converter is configured to convert the first analog signal into a baseband digital signal. However, Farhan does disclose that the headend receives a modulated signal, demodulates the modulated signal to baseband, and then converts this baseband signal to an optical signal for transmission downstream (col. 1, line

63-col. 2, line 14). Dail teaches, in a hybrid fiber-coax system, having baseband digital signals in order to reduce ingress noise (abstract; col. 4, lines 22-39; and col. 4, line 64-col. 5, line 30). It would have been obvious to one of ordinary skill in the art at the time of the invention to use baseband digital signals in order to reduce ingress noise.

Farhan in view of Dail does not expressly disclose that the transmitter includes a status monitoring unit configured to generate status data representing an operational status of the optical distribution node; that the second multiplexer is configured to multiplex the digital signals and the status data to create a combined digital signal; that the first demultiplexer is configured to demultiplex the combined digital signal into the digital signals and the status data; or that the receiver contains a node status monitoring unit configured to receive the status data from the first demultiplexer. Karasawa teaches, in an optical communication system, having a transmitter (ref. 10) include a status monitoring unit (ref. 11) configured to generate status data representing an operational status of an optical node (col. 1, lines 45-62; col. 2, lines 34-54; col. 3, lines 22-24); having a multiplexer (ref. 16) configured to multiplex the digital signal and the status data to create a combined digital signal (col. 3, lines 35-42); having a demultiplexer (ref. 23) configured to demultiplex the combined digital signal into the digital signal and the status data (col. 3, lines 54-57); and having a receiver (ref. 20) contains a node status monitoring unit (ref. 21) configured to receive the status data from the demultiplexer (col. 3, lines 43-50) in order to allow the system to do the system control operation on the optical node and the head end (col. 2, lines 52-54). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the transmitter include a status monitoring unit configured to generate status data representing an operational status of the optical distribution node; to configure the

second multiplexer to multiplex the digital signals and the status data to create a combined digital signal; to configure the first demultiplexer to demultiplex the combined digital signals into the digital signal and the status data; and to have the receiver contain a node status monitoring unit configured to receive the status data from the first demultiplexer in order to allow the system to do the system control operation on the optical node and the head end.

11. Regarding claim 30, Farhan in view of Dail in further view of Karasawa does not expressly disclose that each of the plurality of bandpass filters is configured to filter the first analog signal to produce signals within a frequency range of 5 MHz and 42 Mhz. However, Farhan in view of Dail in further view of Karasawa does suggest that each of the plurality of the bandwidth filters would have a pass band of a particular frequency range (Farhan: col. 5, lines 46-52). It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Farhan in view of Dail in further view of Karasawa suggests that the pass band would have a frequency range, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any frequency range, including from 5 to 42 MHZ, absent a showing of criticality by Applicant.

12. Regarding claim 31, Farhan in view of Dail in further view of Karasawa discloses a data providing unit (ref. 11) disposed in the transmitter and configured to transmit to the multiplexer additional data that includes at least one of framing data and data for bit error rate link performance testing (transmission line bit errors), wherein the second multiplexer is further configured to multiplex the additional data, the baseband digital signal, and the status data to create the combined digital signal (Karasawa: col. 4, lines 30-36).

13. Regarding claim 32, Farhan in view of Dail in further view of Karasawa discloses a data storage unit (ref. 21) disposed in the receiver and configured to receive the additional data from the first demultiplexer, wherein the first demultiplexer is further configured to demultiplex the combined digital signal into the additional data, the baseband digital signal, and the status data (Karasawa: col. 3, lines 43-60).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Krimmel (USPN 6,134,035) see entire document which pertains to an optical network termination unit for a hybrid fiber/coax access network. Sayeed et al (USPN 5,828,677) see col. 2, lines 35-46 which pertains to sending line information, such as BER, back to a transmitter in order to allow the transmitter to use that information to adjust transmission characteristics.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 7:00-4:30 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DJR

Daniel J. Ryman
Examiner
Art Unit 2665

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600